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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,702	05/22/2006	Alan James Coulson	0074-535083	8160
110	7590	06/10/2009	EXAMINER	
DANN, DORFMAN, HERRELL & SKILLMAN			TSE, YOUNG TOI	
1601 MARKET STREET			ART UNIT	PAPER NUMBER
SUITE 2400			2611	
PHILADELPHIA, PA 19103-2307				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/561,702	COULSON, ALAN JAMES	
	<b>Examiner</b>	<b>Art Unit</b>	
	YOUNG T. TSE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 May 2006.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 1-20 is/are allowed.  
 6) Claim(s) 3,4,8,12,13 and 16-20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 22 May 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 20070216.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

2. Claims 1-20 are objected to because of the following informalities:

Claim 1 (line 1), claim 6 (line 2), and claim 10 (line 1), “including” is suggested change to “comprising”.

Claim 1 (line 2), claim 3 (line 3), and claim 4 (line 3), “steps of;” should be “steps of:”.

Claim 1, line 3, “a sample” should be “samples”.

Claim 1 (lines 3, 5, and 6), claim 3 (line 4), claim 4 (lines 5 and 7), and claim 10 (lines 2, 3, and 5), “,” should be “;”.

Claim 1, line 5, “sample of data” should be “samples of received data”.

Claim 2 (line 2), claim 4 (line 2), claim 8 (line 2), claim 11 (line 1), claim 12 (line 2), claim 13 (line 1), claim 14 (line 2), claims 16-18 (line 1), and claims 19-20 (line 2), “wherein” should be “, wherein”.

Claim 2, line 3, “magnitude” should be “amplitude”.

Claim 3, line 2, “estimating” should be “estimating parameters of each of”.

Claim 3, line 5, the phrase “on the output” should be removed.

Claim 4, line 3, “of the” should be “of each of the number of”.

Claim 4, line 4, “an interferer” should be “a narrowband interferer”.

Claim 4, lines 6 and 8, “the interferer” should be “the narrowband interferer”.

Claim 5 (line 2), claim 7 (line 2), and claim 9 (line 2), “including” should be “further comprising”.

Claim 7, line 2, “each incoming” should be “each of incoming”.

Claim 7 (line 3), claim 9 (line 4), and claim 19 (line 4), “packet” should be “data packet”.

Claim 9, line 3, “the current” should be “current”.

Claim 9 (line 4) and claim 19 (line 3), “achieved “lock”” should be “achieved lock”.

Claim 10, line 3, “received data” should be “the received data”.

Claim 10, line 5, “samples of received data” should be “samples of the received data”.

Claim 12, line 4, “the output” should be “an output”.

Claim 12, line 5, “arranged” should be “is arranged”.

Claim 13, line 1, there is no space between “claim” and “12”.

Claim 13, line 2, the word “further” should be removed.

Claim 15, line 2, “wherein the OFDM receiver is further arranged” should be “the OFDM receiver further comprising a pilot detector”.

Claim 16, line 2, “loop (s)” should be “loop”.

Claim 16, line 3, “an OFDM packet” should be “the OFDM data packet”.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 4, 8, 12, 13, and 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 (lines 5-6 and 6-7), claim 4 (lines 4-5, 6-7, and 8-9), claim 12 (lines 4-5), claim 13 (lines 3, 4, and 5), claim 16 (line 2), claim 17 (line 1), claim 19 (line 3), and claim 20 (lines 2-3), the phrases “the periodogram”, “the number of interferers”, “the corresponding periodogram”, “the amplitude of the corresponding periodogram peak”, “the phase of the corresponding periodogram peak”, “the phase lock loop”, “the timer”, “the phase locked loops”, “the filter estimator”, “and “the OFDM guard interval” all lack antecedent basis.

Claim 8, line 2, the term “wherein the phase locked loops are digital phase locked loops” is indefinite since the precedent claim 5 already claimed each digital phase locked loop.

Clarify the difference of “a Fourier transform” between claim 10 (last line) and claim 12 (line 3)? Further, the “Fourier transform” recited in claim 12 appears in conflict of the same term recited in claim 1.

Claim 18 depends on the rejected claim 17.

***Allowable Subject Matter***

5. Claims 1-20 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.
6. Claims 3-4, 8, 12-13, and 16-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Crawford et al. relates to diversity OFDM receiver in RF communications.

Min et al. relates to a method of parameter estimation in a shared channel communications system.

Zehavi et al. relates to a method and apparatus for processing a received signal carrying data via multiple subcarriers at respective subcarrier frequencies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is 571- 272-3051. The examiner can normally be reached on Monday-Friday 10:00-6:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on 571- 272-3021. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YOUNG T. TSE/  
Primary Examiner, Art Unit 2611